

# *Seth B. Winner Sound Studios Inc.*

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## **Instructions For Keith Monks Machines**

Dear Keith Monks Customer:

Congratulations on purchasing one of the finest record cleaning machines available. Because of a new wooden packing insert that fits above the machine when it is shipped, the hinges for the dust cover could not be attached.

The parts are in the envelope you've just opened that contains the instruction manual, power cord, and any extra parts that you may have ordered. It is very simple to attach the moveable hinges: You'll need a standard Philips Head screwdriver. Then you'll take the screw and place the metal washer on it. Take one of the hinges, making sure that the flush side (not the convex side) around the hole is placed next to the washer. After that, place the large plastic washer on the other side of the hinge. Screw the assembly you've just created, into the hinge on either side of the machine, with the long end straight up. Repeat the procedure for the other hinge assembly. Remember: Don't make it too tight...just enough, so that there is a slight amount of friction, when you rotate the hinge. Align both assembled hinges so that they are at the same angle almost straight up. Then slide the dust cover onto the hinges, and you're done.

As a preventative measure during operation, keep a number of towels available to wipe off any excess water that accumulates on the lid during operation, especially on the left side. When you are done for the day, it is strongly suggested that you open the lid, and wipe any water that may have accumulated under the left lip of the lid, as well as the left black piece of wood inside the box.

Don't forget to remove the shipping nuts/bolts and wood that hold the compressor and bottles in place inside the machine. If you have any questions, please do not hesitate to contact me.

Yours truly,



*Seth B. Winner, President*

# **THE KEITH MONKS “ARCHIVIST” MARK 5 RECORD CLEANING MACHINE (RCM)**

## **OWNER’S MANUAL**

*With additional notes covering earlier Keith Monks single chemistry machines*

(All trademarks referenced are the property of their owners, and are given only to identify products of the trademark owner.)

### **Manufacturer and Sole Distributor:**

Keith Monks Sound Systems  
(Trading as Sound Systems (SW) Ltd)  
29 Tower Park  
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PL23 1JD

Tel: (0)1726 83 3783  
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## SPECIFICATIONS

### Major Features, the KEITH MONKS "Archivist" Mark 5 Record Cleaning Machine:

- Designed specifically for up to 16" transcriptions
- Two separate fluid dispensing systems
- Two separate hand pumps for accurate control of fluid application
- Two separate brush blocks to avoid applying the **wrong** fluid
- Powerful turntable allows thorough cleaning of grooves, even with accessory hand brushes
- High quality rugged design for reliable continuous operation
- Heavy duty vacuum pump will not overheat with long periods of use
- Uniquely designed vacuum arm never touches record surface

### Technical Specifications, the KEITH MONKS "Archivist" Mark 5 Record Cleaning Machine:

- European Standard 240V AC 50Hz, 0.32A in wet mode, 1.1A in dry mode, fuse 2.5A.
- North American Electrical: 115vac 60Hz, 0.64A in wet mode, 2.2A in dry mode, fuse 5A.

***Please Note: Electrical requirements are set upon order, and are not adjustable thereafter.***

- Maximum standard record size: 16" transcription or smaller.
- Rotational speed of turntable: approximately 80 rpm @ 60Hz, 5/6 less @ 50Hz.
- Time taken to clean a record varies according to the "wet" time allowed, plus –
- The vacuum arm traverses (dries) a 12" record in approximately 1 minute.
- Pump provides a vacuum of approximately 20 inches of mercury.

### Dimensions and weight of bare RCM:

- 19¼" wide
- 10¾" high from desk surface, plus approximately 3½" for brush block clearance
- 18⅛" deep, plus clearance for IEC power connector
- Weight, without fluids, is approximately 68 lbs (31 kgs)

### Packed shipping dimensions and weights

Shipment is in double-walled corrugated cardboard carton measuring:

- 23" wide x 22" deep x 23" high
- Weight, packed for shipment, is approximately 72 ½lbs (33 kgs)

## **GENERAL INSTRUCTIONS**

Your new KEITH MONKS "Archivist" Mark 5 Record Cleaning Machine (RCM) has been designed to give many years of trouble-free service. The machine is an elegant but simple design and brief observation should be all that is necessary to understand its care and operation.

Each "Archivist" Mark 5 Record Cleaning Machine (RCM) is packed with one each of the following items. Please take a moment to confirm that they are present:

1. Small (approx. 3") two-piece stepped plastic tube for thread loading.
2. 1/16" (0.0625" or 1.588mm) hex wrench used for most set screws on the RCM.
3. IEC cordset for powering the RCM (appropriate power plug may need to be installed).
4. Owner's Instruction Manual (this document).

To ensure correct and reliable operation, please take time to read this manual carefully, and keep it in a safe place for future reference. In this manual:

**WARNING** means something that if not observed could be dangerous to life or health, or could cause serious and expensive damage to the equipment.

**CAUTION** indicates something that should be observed to prevent degradation of the equipment or its performance, or damage to an artefact.

**WARNING** Before attempting any internal examination of your RCM, for your own safety, disconnect the AC power (mains) supply.

KEITH MONKS SOUND SYSTEMS and its distributors will not accept responsibility for damage or injury resulting from improper use of this unit.

## **INSTALLATION AND USE**

1. Remove the two quarter turn deck-returning fasteners located on either side of the front panel.
2. Lift the hinged deck plate by the handle.
3. Carefully lock it into place with the deck support.

### **Transport Protection**

The large vacuum pump located in the bottom of the RCM cabinet has transport protection which must be removed prior to operation. Failure to remove these will result in excessive vibration from the pump, and may impair the vacuum capacity of the unit.



1. Remove the three wing nuts, washers and wood packing blocks securing the pump mounting plate. Place in a plastic bag and store inside the bottom of the cabinet for future use.

**CAUTION:** Do not attempt to remove the threaded bolts. If these have become loose in transit, re-tighten them so they remain securely in place.

2. Remove the transport strip holding the fluid jars in position, and store it inside the bottom of the cabinet for possible future use if your machine is to be shipped to another location. Leave the fixing screws in the wood mounting blocks so they will not be misplaced. Now close the deck plate and re-install the two quarter turn deck-retaining fasteners that you previously removed.
3. Connect a standard IEC power cord set to the power input socket at the rear of the RCM and to the AC (mains) power supply. If you ever lose or misplace the power cord, a replacement can be obtained at any computer store.

## **TESTING YOUR KEITH MONKS RECORD CLEANING MACHINE**

**CAUTION:** Although it is fairly robust, treat the suction nozzle with care; do not routinely allow it to contact the rotating turntable edge or to drop on the deck surface as this, under some conditions, may damage the polished nozzle tip making replacement necessary.

1. The selector switch has three positions. The centre is '**off**', and the switch will normally be left in this position when the machine is not in use.
2. Activate the turntable motor by moving the selector switch up to the '**wet**' position. The turntable will now revolve, but the vacuum pump does not operate in this position.
3. Now move the switch down two positions through the '**off**' position to '**dry**'. The turntable revolves, and the vacuum pump will now operate. Suction will be felt at the nozzle tip at the head of the vacuum arm.
4. Grasp the handle of the vacuum arm and lift it from the rest, swing it across the deck. You will notice a rubbery resistance to your moving the arm, which is normal, and it will remain approximately where you stop moving it. Lightly suspend the arm above the turntable platter, and you will notice it will begin to move slowly away from the centre and towards the outer edge of the turntable.
5. If all the above actions are noted, your machine is probably operating correctly.

## CLEANING CHEMISTRY

The cleaning of phonograph records has long been the subject of heated debate among collectors and everyone involved with the preservation and restoration of old phonograph recordings.

**CAUTION:** It must be presumed that the user has already confronted these issues, ignorance of which could easily result in destruction of an irreplaceable artefact.

## MIXING THE CHEMISTRY

The scientific and chemistry world works in metric measurement, which is quite simple to use once you get started. Fluids are mostly measured in millilitres which is 1/1000 of one litre. Each clean fluid reservoir in the Keith Monks RCM can hold a maximum of 750ml, but should not be filled with more than about 500ml, which just happens to be a very convenient measurement amount.

Some small medicine measuring cups calibrated in millilitres and/or ounces can be obtained from your local chemist or pharmacy which will make the job easier and ensure accuracy. In addition, a small calibrated syringe, without the needle part, will assist in your mixing of the chemistry. Syringes are calibrated in cc (cubic centimetres) and about 3cc to 6cc is a good size. Metric makes it easy – just remember 1cc is equal to 10ml, and this fact makes it simple to use. For the Monks machine chemistry, a good size to mix is 250ml or 500ml at a time.

## OTHER SPECIALIZED CHEMISTRY AND AIDS

For vinyl records we suggest 50% industrial ethylated spirits (which is about 85% ethanol) and 50% triple distilled water. If the weather or room temperature is excessively high, then increase the alcohol to 60%. **CAUTION: ON NO ACCOUNT SHOULD YOU USE ISOPROPOL ALCOHOL.**

There are some other fluids that may be used for specific situations, such as a standard Photo-Flo™ mixture with the addition of some non abrasive detergent to attack particularly dirty or greasy surfaces, or special fluids for removing palmitic acid or lime deposits. You may want to obtain some 250ml laboratory “wash bottles” to dispense them from, rather than loading fluids into one of the Archivist chemistry reservoirs and having to purge it every time you want to change the chemistry. **THIS IN OUR OPINION IS FOR SHELLAC RECORDS ONLY.**

Small amounts of accessory chemicals can be dispensed directly onto a disc surface, and a 250ml laboratory “wash bottle” is a simple and very easy-to-use device which can be obtained from most laboratory suppliers on the internet. A good brand name is Nalgene, and their 2402 wide-mouth Unitary™ wash bottles come in boxes of 6 and are ideal for the purpose.



The “wash bottle” will allow you to deposit an accurate small quantity as the record rotates. The stream from a wash bottle is about the consistency of a child’s water pistol, although eminently much more controllable!

- For shellac records that appear greasy, the standard Photo-Flo™ 200 mixture as previously described, can be intensified by making two additional mixes for this purpose of 3:200 and 6:200 which can be kept in separate wash bottles for application. Use a distilled water rinse after using the intensified Photo-Flo™ 200 mixtures.
- Another useful preparation for dirty discs is to add 2 to 3 drops or more of a mild, non-abrasive, dishwashing detergent to 250ml of the standard Photo-Flo™ solution and use a wash bottle to dispense. This mixture should only develop a trace of foam as you use it, which is a good indication that you have enough detergent in the mix; if not, add more detergent.
- If the discs are severely soiled, use a separate hand brush such as a Disc Doctor brush to do a first wash after using a conventional home vacuum cleaner brush wand to remove all loose debris. This is to avoid damaging the Monks brush which will last much longer if this procedure is followed. Try using the Monks machine vacuum, then do a standard cleaning followed by a distilled water rinse.
- Lacquer discs that are decomposing will exhibit greyish-white palmitic acid deposits, which can be removed by using full strength common S C Johnson blue Windex™. Apply from the spray bottle to cover the disc and after 15 seconds, wipe off with clean soft kitchen paper towelling. Re-spray the disc, and then while running the Monks machine in “wet” mode to operate the turntable only, use a Disc Doctor brush to work the Windex™ into the grooves. Use the Monks machine vacuum to remove all the Windex™ and debris from the surface and do a distilled water rinse with the Monks machine and brush.
- Some radio transcriptions pressed on RCA Victor’s Victrolac™ material have developed a scaly, crusty substance that repels all attempts to remove it using conventional cleaning chemistry. It appears to be a calcium-based material, and can be removed by using full strength Benckiser Inc, Professional Strength Lime-A-Way™ applied to the disc lightly from the spray bottle, while covering the disc label to avoid damaging it. Allow the spray to remain on the surface for 15 seconds, and wipe off with clean soft kitchen paper towelling to remove most of the initial debris. Re-spray the disc, and then while running the Monks machine in “wet” mode to operate the turntable only, use a Disc Doctor brush to work the Lime-A-Way™ into the grooves. Use the Monks machine vacuum to remove all the Lime-A-Way™ and debris from the surface and do a distilled water rinse with the Monks machine and brush. There may be other Lime/Calcium/Rust removers that will work, but only the cited chemistry has been found to work without damaging the transcription.

There are many other methods and materials like this that can be applied to abnormal record cleaning problems. The high torque of the Keith Monks RCM turntable is perfect for using the pointed nylon brushes to scour deep into the grooves to wrench out encrusted material that regular cleaning does not entirely remove. Using some separate tools like this preserves your valuable Keith Monks brush for use in more conventional cleaning tasks.

## **LOADING CLEANING CHEMISTRY**

1. Fill the fluid jars (the ones with the single tubes) with the selected cleaning fluids.
2. Refit the lids and replace the jars in the unit.

## **CLEANING PROCEDURE**

The "Archivist" Mark 5 is a single deck machine having 2 hand pumps, 2 reservoirs for clean fluids and 2 fully equipped brush blocks. The hand pump and brush block marked '1', nearest the front of the machine, should be used for the most frequent standard cleaning operations, and the hand pump and brush block marked '2' will be used for rinse operations or special fluids that may also need to be regularly used.

1. Fill the centre bottle (hand pump '1') with a mixture of 1 part Kodak Photo-Flo™ 200 and 200 parts distilled water as previously described.
2. The bottle nearest the front of the machine (hand pump '2') is for vinyl records.

If you plan to clean very dirty records (particularly flood damaged discs), the waste tubing may become clogged with dirt requiring its replacement. To avoid this problem, it is a good idea to do a pre-clean with a conventional household vacuum cleaner brush wand to get most of the loose dirt and other debris off a record before using the Monks machine.

**CAUTION:** Avoid damage from a full waste jar leaking into the machine, or back down the tubing into the vacuum pump! Regularly check the waste fluid level (waste jar has 2 tubes), every time you add to or check the clean fluid level.

**WARNING: NEVER allow the waste jar to become more than three-quarters full, as suction may draw fluid through the outlet tube and cause very expensive damage to the vacuum pump. Any such damage will not be covered under warranty.**



## **CLEANING A RECORD**

**Do not apply brush pressure for longer than 5 to 10 seconds** – this may cause undue friction on the record.

**Avoid ‘scrubbing’ action** – sliding the brush block along its metal tube support while in contact with the record surface.

**Fluid should not be left on the record surface for more than two minutes** – (less when operating RCM in very warm conditions), to avoid evaporation, thus re-embedding particles.

Although there is sufficient clearance to clean a 16” (41cm) record, the brush block and brush are designed to a common 12” (30cm) standard. It is often necessary to slide the brush block along the metal tube support arm to ensure the complete surface is covered with fluid.

1. Brush or vacuum off any loose dirt or grit where the discs are heavily soiled. A small household vacuum with a circular brush attachment is excellent for this task. Keep in mind, the Keith Monks Record Cleaning Machine is a precision instrument designed to clean grooves that are anywhere between 2 and 7 mils across – that’s 2/1000 to 7/1000 of an inch! You wouldn’t put dinner plates, with table scraps intact, into your dishwasher – you pre-clean them for better results – records work best the same way. Now, place the record on the turntable platter.
2. Lift and swing brush assembly over the record until it locates into a slot in the mounting pillar, and is held in place, then loosen the knurled hand screw on top of the brush block. Position the brush so that it is vertical, and the edge, near the outside of the turntable, is over the run-in groove at the start of the record. Its length should cover the grooved area of the record towards the label. Keep the brush about 1/8” away from the edge of the label, even if this necessitates overhanging the edge of the disc. Gently re-tighten the hand screw.
3. Before you start the turntable, check that the brush is just **slightly** deformed where it contacts the record – remember, you are only trying to reach into those small grooves. Added pressure only deforms the bristles further and will reduce the cleaning capability.
4. Press the hand pump to dispense the appropriate liquid, and a few test pushes on the pump will show you how hard to press it for the amount of fluid you need. Now start the turntable in **‘wet’** mode. You should be using only enough fluid to flow evenly over the record, forming a thin mirror-like film over the surface as the turntable revolves. The brush should contact the record for 5 to 10 seconds to loosen any particles embedded in the grooves.
5. Now lift the vacuum arm from its rest, swing it to the centre of the disc and gently place the nozzle down just inside where the fluid edge is. Move the switch to **‘dry’** position, and raise the brush. You can allow the brush to lightly touch the disc as you move it off in order to sweep any excess liquid on the disc

for the vacuum arm to catch as it travels outwards (the brush will locate into another slot and hold in place outside the edge of the disc). Due to centrifugal force, some drops of fluid may remain at the edge of the record. Remove these by holding the suction arm by the arm lift, and using a to-and-fro action, swing it just above the surface across the record edge.

**NOTE:** The belt drive on the suction arm produces a springy resistance when moved by hand – this is quite normal. To compensate for this, try aiming the arm slightly beyond the point at which you want the vacuuming to start. The arm will move from the centre towards the edge of the disc, completely removing the fluid together with the particles and dissolved substances.

6. When the vacuum arm has reached the edge of the disc, switch to **'wet'** position again, and replace the arm on its rest. Now use the edge of some folded kitchen paper towelling slipped under the edge of the disc to catch any remaining fluid at the edge of the disc.
7. You now have a clean, dry disc that may have an almost insignificant residue of the Photo-Flo chemistry, and possibly under some circumstances, a very small amount of dirt that may have re-deposited from the liquid suspension before the vacuum arm could remove it. For many purposes this stage may be a satisfactory end of the process, but if not, proceed to step 7.
8. Lift the vacuum arm from its rest, and move it to the centre of the disc just inside where the fluid line is. Move the switch to **'dry'** position, and raise the brush. Again, you can allow the brush to lightly sweep across the disc as you move it off in order to keep any excess liquid on the disc for the vacuum arm to catch as it travels outwards.
9. When the arm has traversed the disc, switch to **'wet'** position again, and replace the arm on its rest. Now use the edge of some folded kitchen paper towelling slipped under the edge of the disc to catch any remaining liquid at the edge of the disc. Wipe the vertical edge of the disc.
10. Stop here. You now have an archivally clean record. Place it in a new clean sleeve to keep it that way. You don't want to return a clean record to a dirty sleeve!

Sometimes the thread may build up or loop around the nozzle as it travels across the disc. This is quite normal and there is still adequate buffering between the nozzle and the disc. Any slack will be vacuumed up when the nozzle passes over the edge of the disc, or you can lightly lift the suction arm momentarily and it should immediately take up the accumulated slack.

Your record is now dry, completely clean, free of static, and ready to play. After cleaning a record on your machine, always put it in a new anti-static inner sleeve. NEVER put a clean record back into a dirty sleeve. Between cleans, give it a wipe with a velvet record 'duster' brush before playing. Do not use wet or impregnated cloths of any kind.



## **CARE AND MAINTENANCE**

**WARNING:** Before attempting any internal examination of your RCM, for your own safety, disconnect the AC power (mains) supply.

- **KEEP THE MACHINE CLEAN.** Records need to be kept clean and free of dust, so it makes sense to do the same with the machine that cleans them. Wipe the cabinet, top deck and deck components with a damp cloth, and a little mild detergent or Windex glass cleaner if required.
- **CHECK THE WASTE JAR REGULARLY.** (Remember, the waste jar is the one with two tubes).

**WARNING: NEVER allow the waste jar to become more than three-quarters full, as suction may draw fluid through the outlet tube and cause very expensive damage to the vacuum pump. Any such damage will not be covered under warranty.**

- **CHECK THREAD CONDITION** frequently. Any repeated fouling of the buffer thread points to other problems that should be promptly investigated.
- **EXAMINE THE NOZZLE MONTHLY** and clean off any accumulated dirt. If visibly worn or damaged, the nozzle should be promptly replaced. Do not attempt to clean a record with a damaged nozzle. Regular cleaning of 16", 78rpm and shellac discs may require the nozzle to be replaced more frequently due to the more abrasive composition of the material, and the wider groove pitch. Replace the nozzle as follows:
  1. Loosen the thread reel-holder hand-nut and reel out approximately 12" (30cm) of thread, and cut just below the nozzle tip.
  2. Activate the vacuum pump (switch to 'dry' position).
  3. Switch off when remaining used thread has been vacuumed up the nozzle and into the waste.
  4. Grip the nozzle connecting the plastic suction tube just above arm head and push down firmly. Nozzle will disengage.
  5. Detach old nozzle from connecting tube.
  6. Take new nozzle and fit into arm head, pushing firmly until fully in position.
  7. While holding the bottom of the newly installed nozzle, push the connecting tube firmly onto the top of the new nozzle as far as it will go.
  8. Switch on vacuum pump again, and offer the remaining thread to the nozzle tip – vacuum will draw thread back down the arm.
  9. Switch off when thread reaches waste jar. Re-tighten the thread reel-holder hand-nut.
- **INSPECT THE NYLON BRUSH** regularly for accumulated dirt or discolouration from regular contact with unclean records. If the brush becomes obviously worn or damaged it should be replaced. After a few uses, some accumulated discolouration of the main washing brush will be normal and replacement due to discolouration only is not necessary. Periodically, remove the entire brush block by disconnecting the fluid line, loosening the hand screw

on top of the brush block, and slide it off the mounting bar. Wash it with mild dishwashing detergent or hand soap, working the soap well into the bristle pack. Thoroughly rinse it under tap water and dry with paper towelling, **then** rinse it again with distilled water. The brush will probably not get back to sparkling white, that only happens in TV commercials!

## **BRUSH ADJUSTMENT**

Only one adjustment to the brush in the brush block is necessary. As supplied, with the pin at the bottom of the locating slot, the tips of the brush should just barely touch the highest point of turntable mat. Operationally, you can easily position the pin in the slop, while cleaning a disc, to get the exact groove penetration that you want. Remember, records come in all kinds of thickness, and no one setting will do for all.

## **BUFFER THREAD**

The buffer thread is a special weave of three twisted strands, each made up of fine single filaments of white nylon. The thread is 30 gauge and measures about 5 mils (5/1000 inch) in diameter, 50 meters in length (about 165 feet) and is mounted on a spool 1 1/4" in diameter, 1 3/8" long and with a 5/16" centre hole. One spool will serve to clean about 4,000 average records. Do not use thread except approved **NYLON** thread. This is available from the authorised distributor or direct from Keith Monks Sound Systems in the UK.

It is very slowly spooled out by a geared motor that turns at about 1/4 rpm, and only while the vacuum pump is operating. It is fed up through a separate tube in the vacuum arm and consequently, less than 1/2" of thread is consumed during the process of cleaning an average record. At the end of the vacuum arm the thread passes out of the brass feeder tube, up the nozzle and back down the arm to the waste jar where it accumulates with the used fluid.

The thread buffers the nozzle above the record surface, protecting both the nozzle and the record, and provides clearance for an efficient vacuum to form, straddling a few grooves on the disc. When the thread does eventually run out, or if it breaks during use, the following instructions outline the procedure to replace or re-thread the spool.

## **REPLACING NYLON BUFFER THREAD**

1. Twist and remove the two deck retaining studs on either side of the angled front panel.
2. Lift the deck by the handle and lock it in place with the attached folding support bracket.
3. Pull any remaining thread in vacuum arm through to the waste jar and empty it.



4. Locate the motor driven thread reel-holder and unscrew the knurled hand-nut.
5. Remove the plastic disc and old thread spool.
6. Retain the plastic disc for re-installation with a new spool of thread. The old thread spool may be discarded.
7. Fit a new spool of the correct recommended buffer thread, ensuring that the spool rotates thread out in an anti-clockwise direction when viewed from right hand side of the machine.
8. Loosely re-install the plastic disc and hand-nut, do not tighten, but ensure the thread spool can move freely within its holder.
9. Install the accessory stepped threading tube (supplied with each RCM) between the vacuum nozzle and thread feeder tube behind it.
10. Re-connect the RCM to the AC power (mains) supply, and activate vacuum pump (switch to '**dry**' position), ensuring the vacuum arm is safely clamped on its rest.
11. Reel off approximately 24" (60cm) of thread, trim and pass it under and behind thread reel. Offer the end of thread to metal funnel extending out from under the vacuum arm base. The vacuum will draw thread up through arm to nozzle.
12. Remove the threading tube from the nozzle and feeder tube, still with vacuum pump switched on, offer end of thread to nozzle tip. The vacuum will draw the thread back down arm to the waste jar. When thread is visible in jar, switch off the pump.
13. Lightly tighten the knurled hand-nut on the thread spool holder (do not over-tighten), so that the thread motor can spool out the required thread during the '**dry**' operation.

## **BUFFER THREAD FUNCTION ASSURANCE**

Proper operation of the buffer thread is critical to the function of your RCM.

Most problems encountered can be traced to one of two possibilities:

1. The thread was hanging up in the plastic tubing somewhere, due to a crease or accumulated dirt in the tubing from heavily soiled records. (See note about pre-cleaning heavily soiled discs.)
2. The vacuum was reduced by leaking or corroded connectors, improperly installed tubing, or the lid on the waste bottle was not securely attached.

Check all tubing for any creases – look particularly carefully when closing the deck plate to ensure that tubing going to the waste bottle from the suction arm does not get

bent sharply by being pressed on by the buffer thread spooler assembly. The two tubes entering the waste bottle can be lightly tied with a kitchen bag “wire tie”, forming a loop about an inch in diameter. This will keep both tubes out of harms way.

Check the narrow diameter plastic feeder tube with the small metal funnel on the end, where the thread enters as it leaves the spool towards the suction arm – the funnel should be slightly above the diameter of the spool to avoid any problems with the buffer thread being fouled at this location.

Examine the lid on the waste jar, and be sure it is firmly and tightly attached. Look at the two connectors on the lid and check that they are air tight and secure. The vacuum is maintained in the waste jar and transmitted up the suction arm. The entire vacuum capability is dependent on the integrity of this part of the system.

Look carefully at the suction arm waste tubing where it meets the nozzle. It should come vertically from the nozzle and arc back to the arm without any creasing or folding. There should be about three inches of tubing visible at this location. The buffer thread should be visible as a single strand as it passes through the tubing with the waste fluid.

When the thread is successfully fed through all the tubing, spool some off and ‘rock’ it back and forth by hand as it passes through the arm and tubing to the waste bottle. This will confirm if there is anything impeding its passage. Switching on the vacuum should immediately see any excess thread taken up into the arm and on into the waste jar. This is a good indication that the tubing is clear and ready to work properly again.

**CAUTION:** If the waste tubing in the suction arm and on into the waste jar has become encrusted heavily with dirt, it may need to be replaced as it is not practical to clean it. Attempts to do so may scratch the inside of the tubing and only worsen the problem of thread hanging up in the tubing. To prevent this problem happening in the future, pre-cleaning of heavily soiled discs is recommended.

## **TURNTABLE RE-ATTACHMENT**

In some cases, the set screw(s) that fix the turntable to the drive motor shaft have loosened to the point where the turntable is not being properly driven by the motor. Should this occur, lift off the turntable mat and remove the three flat head slot screws that fix the turntable, and lift off the turntable platter.

The turntable/motor fixing plate is attached to the motor gearbox shaft by one, or in some cases two, small hex head set screw(s) located under the flat part of the plate on opposite sides of the shaft. There is a tapered “flat” on the turntable shaft, and if you locate the turntable mounting too low on the flat (it should be about half-way down the surface of the “flat”), or you don’t get the set screw straight on the “flat”, the screw will work loose and you will have this problem repeatedly.

The screw on the “flat” provides a means of inhibiting any rotating motion, BUT, the trick to getting it right is to slightly rock the turntable mount, back and forth, while you lightly “finger” tighten the screw that faces the “flat” on the shaft. You will clearly feel

the location of the “flat” and as you tighten the screw, a point will be found where you can’t rock the mount any further. At this point, tighten the “flat” screw securely, and then tighten the other screw (if existing) securely. This whole procedure should not take more than 15 minutes to do successfully.

A long hex screwdriver can reach the set screws located under the turntable/motor fixing plate. The supplied small 1/16” (0.0625”) “hex” wrench is awkward for this purpose, but a long screwdriver-style wrench will simplify the task greatly, AND allow exerting the force needed to properly seat the set screw. A commonly available one is made by Xcellite, their type 99-21. It is used in the electronics field and is readily available from electronic supply houses or better hardware stores. Most technical “handy people” should have a “hex” screwdriver, and can tighten both of the set screws, making sure that one of them is aimed at the “flat” on the shaft. Never paint the set screw with LocTite™ or any other thread locking “glue” – this always creates problems if you ever need to remove it.

Re-install the turntable, and resume normal operation.

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Fax: (0)1726 83 3800



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- Designed specifically for up to 12" transcriptions (there are models to take up to 16" records)
- Separate fluid dispensing systems
- Separate hand pumps for accurate control of fluid application
- Separate brush blocks
- Powerful turntable allows thorough cleaning of grooves, even with accessory hand brushes
- High quality rugged design for reliable continuous operation
- Heavy duty vacuum pump will not overheat with long periods of use
- Uniquely designed vacuum arm never touches record surface

### **Technical Specifications, the KEITH MONKS Mark 2 Record Cleaning Machine:**

- European Standard 240V AC 50Hz, 0.32A in wet mode, 1.1A in dry mode, fuse 2.5A.
- North American Electrical: 115vac 60Hz, 0.64A in wet mode, 2.2A in dry mode, fuse 5A.

***Please Note: Electrical requirements are set upon order, and are not adjustable thereafter.***

- Maximum standard record size: 12" transcription or smaller.
- Rotational speed of turntable: approximately 80 rpm @ 60Hz, 5/6 less @ 50Hz.
- Time taken to clean a record varies according to the "wet" time allowed, plus –
- The vacuum arm traverses (dries) a 12" record in approximately 1 minute.
- Pump provides a vacuum of approximately 20 inches of mercury.

### **Dimensions and weight of bare RCM:**

- 19¼" wide
- 10¾" high from desk surface, plus approximately 3½" for brush block clearance
- 18⅛" deep, plus clearance for IEC power connector
- Weight, without fluids, is approximately 68 lbs (31 kgs)

### **Packed shipping dimensions and weights**

Shipment is in double-walled corrugated cardboard carton measuring:

- 23" wide x 22" deep x 23" high
- Weight, packed for shipment, is approximately 72 ½lbs (33 kgs)

## GENERAL INSTRUCTIONS

Your new KEITH MONKS Mark 2 Record Cleaning Machine (RCM) has been designed to give many years of trouble-free service. The machine is an elegant but simple design and brief observation should be all that is necessary to understand its care and operation.

Each Mark 2 Record Cleaning Machine (RCM) is packed with one each of the following items. Please take a moment to confirm that they are present:

1. Small (approx. 3") two-piece stepped plastic tube for thread loading.
2. 1/16" (0.0625" or 1.588mm) hex wrench used for most set screws on the RCM.
3. IEC cordset for powering the RCM (appropriate power plug may need to be installed).
4. Owner's Instruction Manual (this document).

To ensure correct and reliable operation, please take time to read this manual carefully, and keep it in a safe place for future reference. In this manual:

**WARNING** means something that if not observed could be dangerous to life or health, or could cause serious and expensive damage to the equipment.

**CAUTION** indicates something that should be observed to prevent degradation of the equipment or its performance, or damage to an artefact.

**WARNING** Before attempting any internal examination of your RCM, for your own safety, disconnect the AC power (mains) supply.

KEITH MONKS SOUND SYSTEMS and its distributors will not accept responsibility for damage or injury resulting from improper use of this unit.

## INSTALLATION AND USE

1. Remove the two quarter turn deck-returning fasteners located on either side of the front panel.
2. Lift the hinged deck plate by the handle.
3. Carefully lock it into place with the deck support.

### Transport Protection

The large vacuum pump located in the bottom of the RCM cabinet has transport protection which must be removed prior to operation. Failure to remove these will result in excessive vibration from the pump, and may impair the vacuum capacity of the unit.

1. Remove the three wing nuts, washers and wood packing blocks securing the pump mounting plate. Place in a plastic bag and store inside the bottom of the cabinet for future use.

**CAUTION:** Do not attempt to remove the threaded bolts. If these have become loose in transit, re-tighten them so they remain securely in place.

2. Remove the transport strip holding the fluid jars in position, and store it inside the bottom of the cabinet for possible future use if your machine is to be shipped to another location. Leave the fixing screws in the wood mounting blocks so they will not be misplaced. Now close the deck plate and re-install the two quarter turn deck-retaining fasteners that you previously removed.
3. Connect a standard IEC power cord set to the power input socket at the rear of the RCM and to the AC (mains) power supply. If you ever lose or misplace the power cord, a replacement can be obtained at any computer store.

## **TESTING YOUR KEITH MONKS RECORD CLEANING MACHINE**

**CAUTION:** Although it is fairly robust, treat the suction nozzle with care; do not routinely allow it to contact the rotating turntable edge or to drop on the deck surface as this, under some conditions, may damage the polished nozzle tip making replacement necessary.

1. The selector switch has three positions. The centre is '**off**', and the switch will normally be left in this position when the machine is not in use.
2. Activate the turntable motor by moving the selector switch up to the '**wet**' position. The turntable will now revolve, but the vacuum pump does not operate in this position.
3. Now move the switch down two positions through the '**off**' position to '**dry**'. The turntable revolves, and the vacuum pump will now operate. Suction will be felt at the nozzle tip at the head of the vacuum arm.
4. Grasp the handle of the vacuum arm and lift it from the rest, swing it across the deck. You will notice a rubbery resistance to your moving the arm, which is normal, and it will remain approximately where you stop moving it. Lightly suspend the arm above the turntable platter, and you will notice it will begin to move slowly away from the centre and towards the outer edge of the turntable.
5. If all the above actions are noted, your machine is probably operating correctly.



## CLEANING CHEMISTRY

The cleaning of phonograph records has long been the subject of heated debate among collectors and everyone involved with the preservation and restoration of old phonograph recordings.

**CAUTION:** It must be presumed that the user has already confronted these issues, ignorance of which could easily result in destruction of an irreplaceable artefact.

## MIXING THE CHEMISTRY

The scientific and chemistry world works in metric measurement, which is quite simple to use once you get started. Fluids are mostly measured in millilitres which is 1/1000 of one litre. Each clean fluid reservoir in the Keith Monks RCM can hold a maximum of 750ml, but should not be filled with more than about 500ml, which just happens to be a very convenient measurement amount.

Some small medicine measuring cups calibrated in millilitres and/or ounces can be obtained from your local chemist or pharmacy which will make the job easier and ensure accuracy. In addition, a small calibrated syringe, without the needle part, will assist in your mixing of the chemistry. Syringes are calibrated in cc (cubic centimetres) and about 3cc to 6cc is a good size. Metric makes it easy – just remember 1cc is equal to 10ml, and this fact makes it simple to use. For the Monks machine chemistry, a good size to mix is 250ml or 500ml at a time.

## OTHER SPECIALIZED CHEMISTRY AND AIDS

For vinyl records we suggest 50% industrial ethylated spirits (which is about 85% ethanol) and 50% deionised purified water. If the weather or room temperature is excessively high, then increase the alcohol to 70%. **CAUTION: ON NO ACCOUNT SHOULD YOU USE ISOPROPOL ALCOHOL.**

There are some other fluids that may be used for specific situations, such as a standard Photo-Flo™ mixture with the addition of some non abrasive detergent to attack particularly dirty or greasy surfaces, or special fluids for removing palmitic acid or lime deposits. You may want to obtain some 250ml laboratory “wash bottles” to dispense them from, rather than loading fluids into one of the Archivist chemistry reservoirs and having to purge it every time you want to change the chemistry. **THIS IN OUR OPINION IS FOR SHELLAC RECORDS ONLY.**

Small amounts of accessory chemicals can be dispensed directly onto a disc surface, and a 250ml laboratory “wash bottle” is a simple and very easy-to-use device which can be obtained from most laboratory suppliers on the internet. A good brand name is Nalgene, and their 2402 wide-mouth Unitary™ wash bottles come in boxes of 6 and are ideal for the purpose.



The “wash bottle” will allow you to deposit an accurate small quantity as the record rotates. The stream from a wash bottle is about the consistency of a child’s water pistol, although eminently much more controllable!

- For shellac records that appear greasy, the standard Photo-Flo™ 200 mixture as previously described, can be intensified by making two additional mixes for this purpose of 3:200 and 6:200 which can be kept in separate wash bottles for application. Use a distilled water rinse after using the intensified Photo-Flo™ 200 mixtures.
- Another useful preparation for dirty discs is to add 2 to 3 drops or more of a mild, non-abrasive, dishwashing detergent to 250ml of the standard Photo-Flo™ solution and use a wash bottle to dispense. This mixture should only develop a trace of foam as you use it, which is a good indication that you have enough detergent in the mix; if not, add more detergent.
- If the discs are severely soiled, use a separate hand brush such as a Disc Doctor brush to do a first wash after using a conventional home vacuum cleaner brush wand to remove all loose debris. This is to avoid damaging the Monks brush which will last much longer if this procedure is followed. Try using the Monks machine vacuum, then do a standard cleaning followed by a distilled water rinse.
- Lacquer discs that are decomposing will exhibit greyish-white palmitic acid deposits, which can be removed by using full strength common S C Johnson blue Windex™. Apply from the spray bottle to cover the disc and after 15 seconds, wipe off with clean soft kitchen paper towelling. Re-spray the disc, and then while running the Monks machine in “wet” mode to operate the turntable only, use a Disc Doctor brush to work the Windex™ into the grooves. Use the Monks machine vacuum to remove all the Windex™ and debris from the surface and do a distilled water rinse with the Monks machine and brush.
- Some radio transcriptions pressed on RCA Victor’s Victrolac™ material have developed a scaly, crusty substance that repels all attempts to remove it using conventional cleaning chemistry. It appears to be a calcium-based material, and can be removed by using full strength Benckiser Inc, Professional Strength Lime-A-Way™ applied to the disc lightly from the spray bottle, while covering the disc label to avoid damaging it. Allow the spray to remain on the surface for 15 seconds, and wipe off with clean soft kitchen paper towelling to remove most of the initial debris. Re-spray the disc, and then while running the Monks machine in “wet” mode to operate the turntable only, use a Disc Doctor brush to work the Lime-A-Way™ into the grooves. Use the Monks machine vacuum to remove all the Lime-A-Way™ and debris from the surface and do a distilled water rinse with the Monks machine and brush. There may be other Lime/Calcium/Rust removers that will work, but only the cited chemistry has been found to work without damaging the transcription.

There are many other methods and materials like this that can be applied to abnormal record cleaning problems. The high torque of the Keith Monks RCM turntable is perfect for using the pointed nylon brushes to scour deep into the grooves to wrench out encrusted material that regular cleaning does not entirely remove. Using some separate tools like this preserves your valuable Keith Monks brush for use in more conventional cleaning tasks.

## **LOADING CLEANING CHEMISTRY**

1. Fill the fluid jars (the ones with the single tubes) with the selected cleaning fluids.
2. Refit the lids and replace the jars in the unit.

## **CLEANING PROCEDURE**

The Mark 2 is a single deck machine having one hand pump, one reservoir for clean fluids and one fully equipped brush block.

Fill the bottle with a mixture of one part industrial methylated spirits and one part purified deionised water as previously described.

If you plan to clean very dirty records (particularly flood damaged discs), the waste tubing may become clogged with dirt requiring its replacement. To avoid this problem, it is a good idea to do a pre-clean with a conventional household vacuum cleaner brush wand to get most of the loose dirt and other debris off a record before using the Monks machine.

### **VERY IMPORTANT:**

If you wish to clean shellac records **ON NO ACCOUNT** should you use industrial methylated spirits as this has an alcohol base. If you use the incorrect liquid with shellac records then you could ruin the records completely.

To clean shellac records rinse all tubes, brush and liquid containers, and use Kodak Photo Flo™, 3 parts to 600 parts of distilled water.

If in doubt, check with manufacturer, Keith Monks.

**CAUTION:** Avoid damage from a full waste jar leaking into the machine, or back down the tubing into the vacuum pump! Regularly check the waste fluid level (waste jar has 2 tubes), every time you add to or check the clean fluid level.

**WARNING: NEVER** allow the waste jar to become more than three-quarters full, as suction may draw fluid through the outlet tube and cause very expensive damage to the vacuum pump. Any such damage will not be covered under warranty.

## **CLEANING A RECORD**

**Do not apply brush pressure for longer than 5 to 10 seconds** – this may cause undue friction on the record.

**Avoid ‘scrubbing’ action** – sliding the brush block along its metal tube support while in contact with the record surface.

**Fluid should not be left on the record surface for more than two minutes** – (less when operating RCM in very warm conditions), to avoid evaporation, thus re-embedding particles.

1. Brush or vacuum off any loose dirt or grit where the discs are heavily soiled. A small household vacuum with a circular brush attachment is excellent for this task. Keep in mind, the Keith Monks Record Cleaning Machine is a precision instrument designed to clean grooves that are anywhere between 2 and 7 mils across – that’s 2/1000 to 7/1000 of an inch! You wouldn’t put dinner plates, with table scraps intact, into your dishwasher – you pre-clean them for better results – records work best the same way. Now, place the record on the turntable platter.
2. Lift and swing brush assembly over the record until it locates into a slot in the mounting pillar, and is held in place, then loosen the knurled hand screw on top of the brush block. Position the brush so that it is vertical, and the edge, near the outside of the turntable, is over the run-in groove at the start of the record. Its length should cover the grooved area of the record towards the label. Keep the brush about 1/8” away from the edge of the label, even if this necessitates overhanging the edge of the disc. Gently re-tighten the hand screw.
3. Before you start the turntable, check that the brush is just **slightly** deformed where it contacts the record – remember, you are only trying to reach into those small grooves. Added pressure only deforms the bristles further and will reduce the cleaning capability.
4. Press the hand pump to dispense the appropriate liquid, and a few test pushes on the pump will show you how hard to press it for the amount of fluid you need. Now start the turntable in **‘wet’** mode. You should be using only enough fluid to flow evenly over the record, forming a thin mirror-like film over the surface as the turntable revolves. The brush should contact the record for 5 to 10 seconds to loosen any particles embedded in the grooves.
5. Now lift the vacuum arm from its rest, swing it to the centre of the disc and gently place the nozzle down just inside where the fluid edge is. Move the switch to **‘dry’** position, and raise the brush. You can allow the brush to lightly



touch the disc as you move it off in order to sweep any excess liquid on the disc for the vacuum arm to catch as it travels outwards (the brush will locate into another slot and hold in place outside the edge of the disc). Due to centrifugal force, some drops of fluid may remain at the edge of the record. Remove these by holding the suction arm by the arm lift, and using a to-and-fro action, swing it just above the surface across the record edge.

**NOTE:** The belt drive on the suction arm produces a springy resistance when moved by hand – this is quite normal. To compensate for this, try aiming the arm slightly beyond the point at which you want the vacuuming to start. The arm will move from the centre towards the edge of the disc, completely removing the fluid together with the particles and dissolved substances.

6. When the vacuum arm has reached the edge of the disc, switch to **'wet'** position again, and replace the arm on its rest. Now use the edge of some folded kitchen paper towelling slipped under the edge of the disc to catch any remaining fluid at the edge of the disc.
7. You now have a clean, dry disc that may have an almost insignificant residue of the Photo-Flo chemistry, and possibly under some circumstances, a very small amount of dirt that may have re-deposited from the liquid suspension before the vacuum arm could remove it. For many purposes this stage may be a satisfactory end of the process, but if not, proceed to step 7.
8. Lift the vacuum arm from its rest, and move it to the centre of the disc just inside where the fluid line is. Move the switch to **'dry'** position, and raise the brush. Again, you can allow the brush to lightly sweep across the disc as you move it off in order to keep any excess liquid on the disc for the vacuum arm to catch as it travels outwards.
9. When the arm has traversed the disc, switch to **'wet'** position again, and replace the arm on its rest. Now use the edge of some folded kitchen paper towelling slipped under the edge of the disc to catch any remaining liquid at the edge of the disc. Wipe the vertical edge of the disc.
10. Stop here. You now have a very clean and static free record. Place it in a new clean sleeve to keep it that way. You don't want to return a clean record to a dirty sleeve!

Sometimes the thread may build up or loop around the nozzle as it travels across the disc. This is quite normal and there is still adequate buffering between the nozzle and the disc. Any slack will be vacuumed up when the nozzle passes over the edge of the disc, or you can lightly lift the suction arm momentarily and it should immediately take up the accumulated slack.

Your record is now dry, completely clean, free of static, and ready to play. After cleaning a record on your machine, always put it in a new anti-static inner sleeve. NEVER put a clean record back into a dirty sleeve. Between cleans, give it a wipe with a velvet record 'duster' brush before playing. Do not use wet or impregnated cloths of any kind.



## **CARE AND MAINTENANCE**

**WARNING:** Before attempting any internal examination of your RCM, for your own safety, disconnect the AC power (mains) supply.

- **KEEP THE MACHINE CLEAN.** Records need to be kept clean and free of dust, so it makes sense to do the same with the machine that cleans them. Wipe the cabinet, top deck and deck components with a damp cloth, and a little mild detergent or Windex glass cleaner if required.
- **CHECK THE WASTE JAR REGULARLY.** (Remember, the waste jar is the one with two tubes).

**WARNING: NEVER allow the waste jar to become more than three-quarters full, as suction may draw fluid through the outlet tube and cause very expensive damage to the vacuum pump. Any such damage will not be covered under warranty.**

- **CHECK THREAD CONDITION** frequently. Any repeated fouling of the buffer thread points to other problems that should be promptly investigated.
- **EXAMINE THE NOZZLE MONTHLY** and clean off any accumulated dirt. If visibly worn or damaged, the nozzle should be promptly replaced. Do not attempt to clean a record with a damaged nozzle. Regular cleaning of 12" records, 78rpm and shellac discs may require the nozzle to be replaced more frequently due to the more abrasive composition of the material, and the wider groove pitch. Replace the nozzle as follows:
  1. Loosen the thread reel-holder hand-nut and reel out approximately 12" (30cm) of thread, and cut just below the nozzle tip.
  2. Activate the vacuum pump (switch to 'dry' position).
  3. Switch off when remaining used thread has been vacuumed up the nozzle and into the waste.
  4. Grip the nozzle connecting the plastic suction tube just above arm head and push down firmly. Nozzle will disengage.
  5. Detach old nozzle from connecting tube.
  6. Take new nozzle and fit into arm head, pushing firmly until fully in position.
  7. While holding the bottom of the newly installed nozzle, push the connecting tube firmly onto the top of the new nozzle as far as it will go.
  8. Switch on vacuum pump again, and offer the remaining thread to the nozzle tip – vacuum will draw thread back down the arm.
  9. Switch off when thread reaches waste jar. Re-tighten the thread reel-holder hand-nut.
- **INSPECT THE NYLON BRUSH** regularly for accumulated dirt or discolouration from regular contact with unclean records. If the brush becomes obviously worn or damaged it should be replaced. After a few uses, some accumulated discolouration of the main washing brush will be normal and replacement due to discolouration only is not necessary. Periodically, remove the entire brush block by disconnecting the fluid line, loosening the hand screw

on top of the brush block, and slide it off the mounting bar. Wash it with mild dishwashing detergent or hand soap, working the soap well into the bristle pack. Thoroughly rinse it under tap water and dry with paper towelling, **then** rinse it again with distilled water. The brush will probably not get back to sparkling white, that only happens in TV commercials!

## **BRUSH ADJUSTMENT**

Only one adjustment to the brush in the brush block is necessary. As supplied, with the pin at the bottom of the locating slot, the tips of the brush should just barely touch the highest point of turntable mat. Operationally, you can easily position the pin in the slop, while cleaning a disc, to get the exact groove penetration that you want. Remember, records come in all kinds of thickness, and no one setting will do for all.

## **BUFFER THREAD**

The buffer thread is a special weave of three twisted strands, each made up of fine single filaments of white nylon. The thread is 30 gauge and measures about 5 mils (5/1000 inch) in diameter, 50 meters in length (about 165 feet) and is mounted on a spool 1¼" in diameter, 1⅜" long and with a 5/16" centre hole. One spool will serve to clean about 4,000 average records. Do not use thread except approved **NYLON** thread. This is available from the authorised distributor or direct from Keith Monks Sound Systems in the UK.

It is very slowly spooled out by a geared motor that turns at about ¼ rpm, and only while the vacuum pump is operating. It is fed up through a separate tube in the vacuum arm and consequently, less than ½" of thread is consumed during the process of cleaning an average record. At the end of the vacuum arm the thread passes out of the brass feeder tube, up the nozzle and back down the arm to the waste jar where it accumulates with the used fluid.

The thread buffers the nozzle above the record surface, protecting both the nozzle and the record, and provides clearance for an efficient vacuum to form, straddling a few grooves on the disc. When the thread does eventually run out, or if it breaks during use, the following instructions outline the procedure to replace or re-thread the spool.

## **REPLACING NYLON BUFFER THREAD**

1. Twist and remove the two deck retaining studs on either side of the angled front panel.
2. Lift the deck by the handle and lock it in place with the attached folding support bracket.
3. Pull any remaining thread in vacuum arm through to the waste jar and empty it.

4. Locate the motor driven thread reel-holder and unscrew the knurled hand-nut.
5. Remove the plastic disc and old thread spool.
6. Retain the plastic disc for re-installation with a new spool of thread. The old thread spool may be discarded.
7. Fit a new spool of the correct recommended buffer thread, ensuring that the spool rotates thread out in an anti-clockwise direction when viewed from right hand side of the machine.
8. Loosely re-install the plastic disc and hand-nut, do not tighten, but ensure the thread spool can move freely within its holder.
9. Install the accessory stepped threading tube (supplied with each RCM) between the vacuum nozzle and thread feeder tube behind it.
10. Re-connect the RCM to the AC power (mains) supply, and activate vacuum pump (switch to '**dry**' position), ensuring the vacuum arm is safely clamped on its rest.
11. Reel off approximately 24" (60cm) of thread, trim and pass it under and behind thread reel. Offer the end of thread to metal funnel extending out from under the vacuum arm base. The vacuum will draw thread up through arm to nozzle.
12. Remove the threading tube from the nozzle and feeder tube, still with vacuum pump switched on, offer end of thread to nozzle tip. The vacuum will draw the thread back down arm to the waste jar. When thread is visible in jar, switch off the pump.
13. Lightly tighten the knurled hand-nut on the thread spool holder (do not over-tighten), so that the thread motor can spool out the required thread during the '**dry**' operation.

## **BUFFER THREAD FUNCTION ASSURANCE**

Proper operation of the buffer thread is critical to the function of your RCM.

Most problems encountered can be traced to one of two possibilities:

1. The thread was hanging up in the plastic tubing somewhere, due to a crease or accumulated dirt in the tubing from heavily soiled records. (See note about pre-cleaning heavily soiled discs.)
2. The vacuum was reduced by leaking or corroded connectors, improperly installed tubing, or the lid on the waste bottle was not securely attached.

Check all tubing for any creases – look particularly carefully when closing the deck plate to ensure that tubing going to the waste bottle from the suction arm does not get



bent sharply by being pressed on by the buffer thread spooler assembly. The two tubes entering the waste bottle can be lightly tied with a kitchen bag “wire tie”, forming a loop about an inch in diameter. This will keep both tubes out of harms way.

Check the narrow diameter plastic feeder tube with the small metal funnel on the end, where the thread enters as it leaves the spool towards the suction arm – the funnel should be slightly above the diameter of the spool to avoid any problems with the buffer thread being fouled at this location.

Examine the lid on the waste jar, and be sure it is firmly and tightly attached. Look at the two connectors on the lid and check that they are air tight and secure. The vacuum is maintained in the waste jar and transmitted up the suction arm. The entire vacuum capability is dependent on the integrity of this part of the system.

Look carefully at the suction arm waste tubing where it meets the nozzle. It should come vertically from the nozzle and arc back to the arm without any creasing or folding. There should be about three inches of tubing visible at this location. The buffer thread should be visible as a single strand as it passes through the tubing with the waste fluid.

When the thread is successfully fed through all the tubing, spool some off and ‘rock’ it back and forth by hand as it passes through the arm and tubing to the waste bottle. This will confirm if there is anything impeding its passage. Switching on the vacuum should immediately see any excess thread taken up into the arm and on into the waste jar. This is a good indication that the tubing is clear and ready to work properly again.

**CAUTION:** If the waste tubing in the suction arm and on into the waste jar has become encrusted heavily with dirt, it may need to be replaced as it is not practical to clean it. Attempts to do so may scratch the inside of the tubing and only worsen the problem of thread hanging up in the tubing. To prevent this problem happening in the future, pre-cleaning of heavily soiled discs is recommended.

## **TURNTABLE RE-ATTACHMENT**

In some cases, the set screw(s) that fix the turntable to the drive motor shaft have loosened to the point where the turntable is not being properly driven by the motor. Should this occur, lift off the turntable mat and remove the three flat head slot screws that fix the turntable, and lift off the turntable platter.

The turntable/motor fixing plate is attached to the motor gearbox shaft by one, or in some cases two, small hex head set screw(s) located under the flat part of the plate on opposite sides of the shaft. There is a tapered “flat” on the turntable shaft, and if you locate the turntable mounting too low on the flat (it should be about half-way down the surface of the “flat”), or you don’t get the set screw straight on the “flat”, the screw will work loose and you will have this problem repeatedly.

The screw on the “flat” provides a means of inhibiting any rotating motion, BUT, the trick to getting it right is to slightly rock the turntable mount, back and forth, while you lightly “finger” tighten the screw that faces the “flat” on the shaft. You will clearly feel

the location of the “flat” and as you tighten the screw, a point will be found where you can’t rock the mount any further. At this point, tighten the “flat” screw securely, and then tighten the other screw (if existing) securely. This whole procedure should not take more than 15 minutes to do successfully.

A long hex screwdriver can reach the set screws located under the turntable/motor fixing plate. The supplied small 1/16” (0.0625”) “hex” wrench is awkward for this purpose, but a long screwdriver-style wrench will simplify the task greatly, AND allow exerting the force needed to properly seat the set screw. A commonly available one is made by Xcellite, their type 99-21. It is used in the electronics field and is readily available from electronic supply houses or better hardware stores. Most technical “handy people” should have a “hex” screwdriver, and can tighten both of the set screws, making sure that one of them is aimed at the “flat” on the shaft. Never paint the set screw with LocTite™ or any other thread locking “glue” – this always creates problems if you ever need to remove it.

Re-install the turntable, and resume normal operation.

## KEITH MONKS RECORD CLEANING MACHINE

### GENERAL INSTRUCTIONS

Thank you for purchasing this **KEITH MONKS** quality product. This record cleaning machine (R.C.M.) has been designed to give many years of trouble free use. To ensure correct and reliable operation, please take time to read this manual carefully, and keep it in a safe place for future reference.

### WARNING

**all AC construction**

**Disconnect from mains supply before attempting internal examination**

**KEITH MONKS SOUND SYSTEMS** and its distributors cannot accept responsibility for damage or injury resulting from improper use of this unit.

### PRIOR TO USE

- \* Twist and remove the two deck retaining studs on either side of the front panel. Lift deck by handle and lock into place with its deck support.
- \* Remove the two wing nuts, washers, protection clamp and packing blocks securing the pump mounting plate. These are for transit protection only – failure to remove will result in excessive vibration from the pump on deck surface, and will impair the vacuum capacity of the unit. **DO NOT REMOVE THE BOLTS**
- \* Remove the transit strip holding the two jars in position.
- \* Connect the supplied power cord to the matching power input socket at the rear of the unit and to the AC mains supply.

### TESTING YOUR KEITH MONKS RECORD CLEANING MACHINE

- \* Activate turntable motor by moving switch to 'wet' position. The turntable will now revolve.
- \* Now move switch down two positions to 'dry'. The turntable will revolve, the vacuum pump will activate and suction will be felt at the nozzle tip (at the head of the vacuum arm)
- \* Remove vacuum arm from rest, swing across the deck and hold arm above the turntable platter. It will now move in an arc away from the centre and towards the outer edge of the deck
- \* Do not allow nozzle to contact the turntable or deck surface, as this may damage the highly polished nozzle tip.

### MARK II AND MARK IV VERSIONS PREPARING THE CLEANING FLUID

#### VINYL RECORDS

- \* For regular vinyl records, use the recommended type of cleaning fluid obtainable in some countries from the local **KEITH MONKS** distributor. (In the U.K. a licence to obtain industrial alcohol must be obtained from the local Customs & Excise Department – this is mixed 50/50 with triple distilled water.)
- \* Fill this fluid into the jar with the single tube. Refit lid and replace jar in the unit.

#### SHELLAC RECORDS

- \* Do not use alcohol-based fluids on 16" or 78rpm records, which are made of shellac, as the alcohol will dissolve the surface of the record.
- \* To clean shellac records, follow these instructions, before use:
- \* Flush the clean fluid (single tube) jar thoroughly
- \* Detach the brush from its block and wash in warm water with a little mild detergent, then rinse well.



### SHELLAC RECORDS (cont)

- \* Fill the clean fluid jar with triple distilled or demineralised water only, refit lid and replace jar in unit.
- \* With the brush still detached and the brush block swung away from the unit, hold a cloth under the block to catch the escaping fluid and fully depress the hand pump 5 or 6 times to remove all traces of alcohol from the tubing in the cleaning system
- \* Refit brush. Proceed with cleaning instructions as detailed in the following sections for the R.C.M.

For particularly dirty shellac records, for instance those which have accumulated grease etc, try adding a few drops of a mild detergent to the water. Clean a batch of discs, then repeat above flushing procedure and re-clean each disc with distilled water only. This will remove any detergent residue from the groove which may dull frequency response when playing the record.

### MARK V VERSION

This is a single deck version, but it has 2 hand pumps, 2 containers for clean fluid and 2 brush blocks each with its own separate brush. Hand pump and brush block marked '1' are for cleaning standard non-shellac records, e.g. all 45rpm, all 33rpm and 78rpm's made of vinyl.

Fill the centre bottle with a mixture of alcohol and distilled water as described on page 1. The bottle nearest the front of the machine is for cleaning shellac records and should be filled with triple distilled water or distilled water with a few drops of washing up liquid ONLY. If the record is particularly dirty it may be necessary to clean it a second time using distilled water only. There is sufficient clearance to clean a 16" (41cm) record, but as the brush block and brush are not sufficiently wide it may be necessary to slide the brush along the arm of the brush block to ensure the complete surface is covered with fluid.

### REMEMBER

to avoid leakage from a full vacuum/waste jar into the machine, or back down the tubing into the vacuum pump, **regularly check the waste fluid level** (waste jar has 2 tubes), for instance, every time you check the clean fluid level. Do not allow waste jar to become more than three quarters full.

### CLEANING YOUR RECORDS

After cleaning a record on your machine, always put it in a new antistatic inner sleeve (available from your KEITH MONKS distributor). Between cleans, give it a wipe with a proprietary dry record cloth before playing. The use of standard wet cloths is definitely not recommended.

### CLEANING A RECORD

- \* Place record onto the turntable platter.
- \* Lift and swing brush assembly over the record until it locates into a slot in the mounting pillar, and is held in place.
- \* Loosen knurled hand screw on top of brush block, and position brush so that its edge is touching the run-in groove at the start of the record. Gently retighten hand screw.
- \* Move switch to 'wet' position. With turntable revolving, gently depress hand pump allowing just enough fluid onto the record to form a film over the complete surface.
- \* Hold brush down onto record for 5 to 10 seconds to loosen any particles embedded in the grooves. (Do not apply pressure for longer than 5 to 10 seconds as this may cause undue friction on the record. Also, avoid 'scrubbing' action - sliding brush block along its metal tube support)
- \* Do not leave fluid on the record surface for more than two minutes (sooner when operating R.C.M. in warm conditions), to avoid evaporation, thus re-embedding particles.)
- \* Lift and swing brush assembly away from record (it will locate into another slot and hold in place)
- \* Move switch down to 'dry' position. Swing vacuuming arm out from its rest and place nozzle gently down onto outer edge of the record label. The belt drive on the suction arm produces a springy resistance when moved by hand - this is quite normal, but try aiming the arm slightly beyond the point at which you wish vacuuming to start to compensate for this. The arm will now move from the centre out towards the edge of the disc, completely removing the fluid together with the particles and dissolved substances

\* Due to centrifugal force, some drops of fluid may remain at the edge of the record. Remove these by holding the suction arm by the arm lift and using a to-and-fro action across the record edge. Catch any fluid at the edge with a soft absorbant cloth.

Sometimes the thread may loop around the nozzle as it travels across the record. This is quite normal and there is still adequate buffering between the nozzle and the disc. Any slack will be vacuumed up when the nozzle passes over the edge of the disc.

Your record is now dry, completely clean, free of static, and ready to play.

## CARE & MAINTENANCE

### WARNING

all AC construction

Disconnect from mains supply before attempting internal examination

### REGULAR CHECKS

#### KEEP YOUR R.C.M. CLEAN!

\* Records need to be kept clean and free of dust, so it makes sense to do the same with the machine which cleans them. Wipe the cabinet, top deck and deck components with a damp cloth, and a little mild detergent if required.

\* Fluid levels – clean fluid jar has 1 tube, waste jar has 2 tubes. Do not allow waste water jar to become more than three quarters full, as suction may draw fluid through the outlet tube and this will damage the pump.

#### NOZZLE CONDITION

\* Check for accumulated dirt. If visibly worn, do not attempt to clean a record – Replace the nozzle immediately.

\* Reel out approx. 30cm of thread, and cut just below nozzle tip. Activate vacuum pump (switch to dry position). Switch off when remaining used thread has been vacuumed up the nozzle and into the waste jar (with reel holder hand-nut loosened)

\* Grip nozzle connecting tube (green) just above arm head and push down firmly. Nozzle will disengage.

\* Detach old nozzle from connecting tube. Take new nozzle and fit into arm head, pushing home firmly until fully in position, then push connecting tube firmly onto new nozzle top as far as it will go.

\* Switch on vacuum pump again, and offer remaining thread to nozzle tip – vacuum will draw thread back down arm, switch off when thread reaches waste jar.

\* In normal use, when cleaning vinyl records, nozzle should be replaced every 1 to 2 years, depending upon amount of usage.

#### REMEMBER

\* Regular cleaning of 16rpm and 78rpm and other shellac discs will require nozzle to be replaced more frequently. This is due to the more abrasive composition of the material, and the wider groove pitch.

#### NYLON BRUSH

\* Inspect regularly for discolouration from regular contact with unclean records, or after cleaning a particularly dirty or greasy disc. Remove, by loosening hand screw on top of brush block, and wash in warm water with a little mild detergent. Rinse well and refit. replace if discolouration persists, or around once a year in normal use.

#### NYLON THREAD

The nylon thread used in this record cleaning machine is reeled out by a slow synchronous motor and ends up vacuumed back into the waste jar with the used fluid. At the vacuum arm head, it passes out of the thread feeder tube, up the nozzle and back down the arm. The thread buffers the nozzle above the record surface, protecting both the nozzle and the record, and providing clearance for efficient vacuuming to take place. Only use the special thread available from KEITH MONKS or from

their approved distributors.

\* Very little thread is used during the cleaning process. When the thread does eventually run out, or if it breaks during use, loosen thread holder hand nut and follow instructions below.

#### REPLACING NYLON THREAD

\* Twist and remove the two deck retaining studs on either side of the angled panel. Lift deck by handle and lock in place with support bracket.

\* Pull any remaining thread in vacuum arm through to waste jar and empty it.

\* Locate thread reel holder. Unscrew knurled hand-nut. Remove plastic disc and old thread reel.

\* Fit new reel of correct type of thread, ensuring that reel rotates thread out in an anti clockwise direction when viewed from right hand side of the R.C.M.

\* Refit plastic disc and hand-nut, do not tighten, ensure thread reel can move freely within its holder

\* Fit **threading tube** (supplied) between vacuum nozzle and feeder tube behind it. Reconnect R.C.M. to mains supply, and activate vacuum pump (switch to 'dry' position), ensuring vacuum arm is safely clamped on its rest.

\* Reel off approx 60cm of thread, trim and pass it under and behind thread reel. Offer end of thread to metal funnel extending out from under vacuum arm base. Vacuum will draw thread up through arm to nozzle.

\* Remove **threading tube** from nozzle and feeder tube, still with vacuum pump switched on, offer end of thread to nozzle tip. Vacuum will draw thread back down arm to waste jar. When thread is visible in jar, switch off pump.

\* Tighten knurled hand-nut on thread reel holder (do not overtighten), so that thread motor can reel thread out during operation.



FAULT FINDING & TROUBLE SHOOTINGPROBLEMPOSSIBLE CAUSEACTION TO TAKE

Traces of fluid remain on record after cleaning

incorrect mixture proportions

See section: PREPARING CLEANING FLUID

insufficient vacuum

Check waste jar lid for secure fit

Check tubing for twists, breaks or blockages

Check following with a vacuum gauge (or simple finger test—place finger over tube/inlet to be tested, hold 15 seconds then release and listen for prominent hiss which soon quieters to normal – this indicates vacuum system running correctly) in this order:

Check tube from waste jar to vacuum pump. If fails test, pump is faulty. CONTACT YOUR R.C.M. DISTRIBUTOR

Check on tube from arm to waste jar. If fails test, check jar lid secure (replace if lid is corroded), check tube for twists breaks, blockage.

Check on nozzle tip. If fails test, blockage in arm tubing, or nozzle severely worn (replace). Check tube connection.

Tubes blocked by accumulated thread or particles – can be easily freed by reeling out extra thread, and pulling it through either side of the blockage in a to-and-fro action. When finished, pull any slack thread through and deposit in waste jar.

Fluid does not come through brush block when hand pump depressed

No cleaning fluid left

Refill

Faulty hand pump

Check for signs of leaking, loose operation etc. Replace if necessary

Loose or broken tube

Check tube connections and for signs of tube breaks (depress hand pump slowly and watch for seeping fluid)

Faulty fluid valves

Check foot valve (in clean fluid jar) and non-return valve (between hand pump and brush block). If black valve inserts do not move when hand pump depressed, or if large air bubbles are visible either side of non-return valve, then detach valve unit and replace it

	Blocked fluid holes in brush block	Take pin and push through each hole to clear obstruction (this should not happen if the recommended cleaning fluid is used)
Nozzle and thread accumulate particles which redeposit on the record	Thread catching	Check thread route, pull in to-and-fro action to clear
	Thread reel plastic discs loose Thread motor faulty	Push home and tighten knurled hand nut Check centre motor spindle rotating (visible when RCM switched to 'dry') NON SERVICABLE - REPLACE IF FAULTY
	Nozzle tip worn	Replace nozzle See section - NOZZLE CONDITION
Vacuum arm does not move across record or moves too slowly (more than 90 seconds per LP side)	Arm belt drive slipping	Clean, or replace if visibly worn or replace every few years in use.
	Arm bearing seized	Detach belt drive, swing arm across and back, check for smooth running NON SERVICABLE - REPLACE IF FAULTY
	Arm motor faulty	Check centre motor spindle rotating (visible when switched to 'dry') NON SERVICABLE - REPLACE IF FAULTY
	Belt pulley dirty, loose, come adrift	Clean, tighten refit. Replace if worn.
Turntable motor does not rotate	Turntable motor faulty	Activate unit (switch to 'wet') and check rotor is turning (visible at base of motor behind field coil). Isolate unit from mains supply. Attempt to spin rotor manually. If stuck, motor has seized. NON SERVICABLE - REPLACE IF FAULTY
	Loose electrical connections	Check all securely fitted
	Turntable boss mount loose	Check top fastening secure. Rotate platter and watch base or turntable motor for rotor spinning
Excess fluid build up. Drips on to underside of disc. Record label edge fades after cleaning	Too much fluid applied	Experience of using your RCM will help you gauge how much fluid to apply. If all liquid vacuumed from disc, no harm will come to your record (note - if fluid accumulates on underside, flip record over and vacuum it up too). Alcohol can effect some label print, but causes no damage to record or machine, providing brush is kept clean See section - NYLON BRUSH
	Brush block incorrectly positioned	Adjusting using top hand-screw. Adjust brush angle with the hex screws on side of block using Allen key (supplied)
	Incorrect thread	Use correct thread

Occasional 'Spiralling marks' on disc after vacuuming	Insufficient fluid applied	Repeat cleaning cycle
	Fluid left on record too long before vacuuming	Partial evaporation and possible re-embedding of particles. Again, repeat cleaning cycle
	Worn nozzle	Replace See section - NOZZLE CONDITION
	End of thread hardened	Usually after long period without use. Pull a little thread through at the nozzle, let vacuum take up the slack
Record not completely wet after brushing	Insufficient fluid	Re-apply
	Brush block incorrectly positioned	Adjust using top hand-screw and Allen key (supplied) on block
Arm will not re-thread	Insufficient vacuum	See section: POSSIBLE CAUSE/ INSUFFICIENT VACUUM
	Incorrect procedure used	See section: NYLON THREAD
Excessive vibration and noise when RCM in operation	Transit fastening still fitted	Remove
	Pump isolating mount collapsed	Remove securing nuts on pump board. Lift pump and board. Replace faulty mounts. (Contact your RCM distributor for spare parts)
	Loose turntable assembly	See section: Turntable does not rotate
	Faulty pump or turntable motor	Contact your RCM distributor
Machine does not switch on No functions operative	RCM fuse blown	Check, replace if necessary
	Electrical connections	Check all wiring connections, including in switch box under angled front panel. Check connections/switches fuses to AC supply.
Interference with other electrical equipment	Suppression required	Have your machine checked and modified

Contact your Keith Monks Distributor for spare parts and further information:

Manufactured by:

Sound Systems (SW) Ltd., 29 Tower Park, Fowey, Cornwall PL23 1JD

Tel. 01726 833783

Factory: Unit 7, Beechnut Industrial Estate, Beechnut Road, Aldershot, Hants, GU12 4JA

Tel 01252 334123.



## **SPECIFICATIONS**

### **Major Features, the KEITH MONKS Mark 2 Record Cleaning Machine:**

- Designed specifically for up to 12" transcriptions (there are models to take up to 16" records)
- Separate fluid dispensing systems
- Separate hand pumps for accurate control of fluid application
- Separate brush blocks
- Powerful turntable allows thorough cleaning of grooves, even with accessory hand brushes
- High quality rugged design for reliable continuous operation
- Heavy duty vacuum pump will not overheat with long periods of use
- Uniquely designed vacuum arm never touches record surface

### **Technical Specifications, the KEITH MONKS Mark 2 Record Cleaning Machine:**

- European Standard 240V AC 50Hz, 0.32A in wet mode, 1.1A in dry mode, fuse 2.5A.
- North American Electrical: 115vac 60Hz, 0.64A in wet mode, 2.2A in dry mode, fuse 5A.

***Please Note: Electrical requirements are set upon order, and are not adjustable thereafter.***

- Maximum standard record size: 12" transcription or smaller.
- Rotational speed of turntable: approximately 80 rpm @ 60Hz, 5/6 less @ 50Hz.
- Time taken to clean a record varies according to the "wet" time allowed, plus –
- The vacuum arm traverses (dries) a 12" record in approximately 1 minute.
- Pump provides a vacuum of approximately 20 inches of mercury.

### **Dimensions and weight of bare RCM:**

- 19¼" wide
- 10¾" high from desk surface, plus approximately 3½" for brush block clearance
- 18¼" deep, plus clearance for IEC power connector
- Weight, without fluids, is approximately 68 lbs (31 kgs)

### **Packed shipping dimensions and weights**

Shipment is in double-walled corrugated cardboard carton measuring:

- 23" wide x 22" deep x 23" high
- Weight, packed for shipment, is approximately 72 ½lbs (33 kgs)